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Identifying current best practice in the export of young cattle to Israel

Final Report prepared for MLA and Livecorp by:

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Final Report

Compiled after further comment by contributors.

Background

The principal method used for this project has been to interview all of the key personnel involved in the trade to obtain their views on the export of calves to Israel. This information, after a secondary review by contributors, has now been summarized into Best Practice recommendations.

To date, I have reviewed the voyage reports for the 26 voyages that have carried calves to Israel from February 1999 to December 2000. I have spoken to 5 exporters, 8 veterinarians and 12 stockmen active in the trade. Comments from contributors have been considered in the production of the second draft.

Findings

1. Statistical Analysis

Unfortunately, records are not kept in a manner, which would allow any serious statistical analysis of performance. Even the mortality reports are of little use as calves are not always differentiated from other stock onboard the vessel.
The total mortality on the 26 voyages reviewed was 690 head from 115,255 head of cattle shipped (0.6%). Only 3 of the 26 voyages reported mortality rates in excess of one percent. These three voyages were completed in May and July of 2000. In these cases the mortality rates were 1.86, 1.42 and 1.78. All three involved different vessels.

2. Voyage Reports

While these reports are of some interest they provide only minimal information for a specific investigation into the transport of calves. They do however generally support the propositions derived from the personal interviews and general feedback. In the case of the three high mortality voyages, two were attributed to extreme temperature and humidity stress to calves sourced from southeastern Australian winter conditions while the third appears to be associated with inappropriate veterinary intervention by the stockman.

3. Interviews

The most striking feature of these interviews was the remarkable similarity of the opinions provided by all of the participants**. In essence, the critical factors that determine the outcome of the voyage relate to common sense animal husbandry.** During the interviews a number of key observations were consistently repeated and are summarized below.

4. Dissemination to Industry

I believe that the best means of dissemination of this information is simply to send copies to all those persons involved in this particular trade. As they only number

around 40 – 50 including stockmen, it should be a relatively simple task to ensure they all receive a copy. In addition a special section for the transport of calves should be included in the next addition of the Stockman's Handbook.

Key Observations

- Husbandry issues can be divided into pre shipment preparation and shipboard management. Of these, pre shipment preparation has the greatest potential to affect the outcome of the voyage. If calves arrive at the ship in weak and stressed condition then the voyage is bound to be a difficult one regardless of the level of care provided onboard.
- There are a number of husbandry matters which relate specifically to the shipboard care of calves. If these are managed well and the calves have arrived on board in good condition then the outcome of the voyage is likely to be favourable.
- Shipments during the southern Australian winter are the most challenging in terms of animal care and can be expected on average to have the highest levels of illness and mortality.
- Calves have the capacity to travel at least as well as adult cattle under appropriate conditions. Most participants noted that, given good preparation and shipboard conditions, heavy cattle are in fact more likely to suffer from mortalities associated with injury/misadventure, high temperatures and humidity than calves.

Specific observations

Pre shipping Factors

- During the southern winter, calves must be protected from the elements during their preparation period in feedlots / holding facilities. The management of calf holding facilities is more important than the specifics of design although only a solid roof can protect calves from driving rain, which is very common during winters in Portland, Adelaide and Fremantle.
- Efficient yard drainage is essential to ensure that calves have access to relatively dry ground somewhere in their pens during wet weather. Calves, which are constantly wet and cold, will develop high levels of illness.
- Modest stocking densities within holding facilities are important to reduce the development and spread of respiratory infections
- Appropriate nutrition including free access to good quality hay is important to reduce the levels of shy feeders and intestinal problems. High protein "calf" pellets may be of little benefit to calves and have the potential to contribute to digestive problems.
- The use of certain electrolytes/supplements in the holding facilities appears to be quite useful for assisting stressed calves to recover their strength more quickly. A supplement called "Maximin" appears to be beneficial both in the feedlot and on the ship.

- Timely bedding management is critical for the control of respiratory disease, as elevated ammonia levels will create ideal conditions for the development of disease.
- Protection from the wind may be even more important than protection from the rain as wind-chill has the potential to be even more dangerous than simply being wet. Dramatic and frequent fluctuation in temperature may be more important than consistently low temperatures.
- Animals, which have been satisfactorily weaned prior to delivery at the holding facility, will suffer much lower levels of stress than those delivered direct from weaning on the property of origin.
- If property of origin weaning is unavoidable then the minimum weight of selected animals should be 170 kg “off the mother” in order to ensure that their arrival weight at the feedlot is no less than 150 kg.
- Where possible, stressful tasks such as ear tagging and dehorning should be carried out on the property of origin.
- 150 kg seemed to be generally agreed as the most appropriate minimum weight for delivery to the holding depot to ensure a good chance of survival. In addition to the actual weight of the animal, condition score is also very important. A forward condition, robust 150 kg calf will be a much better risk than a skinny and stressed 170 kg companion.
- Bos Indicus calves are much hardier than Bos Taurus. While there is considerable debate on the capacity of different Taurus breeds to cope, the majority opinion favours the view that Friesian calves are the most vulnerable to illness and death during feedlot preparation and the voyage. Friesian calves have also been reported to have a much higher urination rate onboard ship during hot weather than other breeds. This contributes to deteriorating bedding conditions and elevates humidity.
- Mass medication of high risk / suspect calves in southern winter holding depots is recommended. At present Micotil is the drug of choice. When Pasturella vaccine is available this may also be appropriate.
- Vitamin D supplementation may be appropriate for calves sourced during southern winters then transported on dimly lit ships.
- There is some suspicion that treatment with the flukicides and Triangle 3 vaccine (for IBR) may make some calves ill. No firm proof at this time.
- It is very important to draft the various size groups into lines for trucking to the ship. If this is not done at the holding facility it will have to be completed onboard under much more difficult conditions resulting in unnecessary additional stress to calves.

Shipboard Factors

- While there was not unanimous agreement, most participants suggested that calves need additional space. A figure of 10% seemed to be commonly accepted.

The general proposition is that calves tire more easily and need more room to lie down and sleep than mature cattle. This may not be necessary for Bos Indicus calves or Bos taurus animals sourced from northern ports. The reduced density also facilitates more effective inspection, which can be a problem with large numbers of calves in a single pen.

- The practice of removing the front of the pens overnight to give calves the additional space of the alleyways may be of value especially during passage through hot and humid zones.
- If the vessel is only partly loaded in Portland or Adelaide, the calves should be allowed to expand into the additional space until they reach Fremantle.
- Using an average weight when calculating the space allowances for calves may lead to higher loading densities for smaller animals. The AMSA table for calves prescribes a density of 0.77 square metres for all animals under 200 kg. This means that a different figure of the overall number which can be loaded into a specific space will be arrived at if the calf calculation is based on an overall average of the calves combined weight (where the average is more than 200 kg) rather than completing separate calculations for all animals 200 kg and under and another for those above 200 kg.
- Appropriate segregation is essential. Quite small differences in the weight of calves will allow the stronger animals to dominate for feed, water and space. If the drafting carried out before delivery to the ship is not adequate then this must be carried out as quickly as possible once the loading has been completed. Those calves, which are in the suspect health category for any reason, should be segregated to pens with plenty of space and where they can be easily and frequently inspected and treated.
- Bedding is critical. Calves tend to lie down more than mature cattle so plentiful supplies of sawdust or other bedding materials are essential.
- Wherever possible, calves should be given the areas with best ventilation onboard.
- Good lighting is also important to allow for efficient inspections.
- Pens used for calves should ideally be relatively small to reduce total numbers in the pen.
- Trough heights are critical. Both water and fodder troughs should be adjusted to the appropriate height for the calves from the commencement of the voyage. A number of participants noted that nose bowl watering systems presented significant problems for calves accessing adequate quantities of water. Additional feed troughs are also of value to allow shy feeders better access to fodder. If the troughs and the space are available, the slower calves in the pen will have a better chance of accessing their full ration if the fodder for the pen is spread over more then the necessary minimum number of troughs.
- Fodder troughs must be cleaned out regularly to prevent accumulation of mould in the corners, which may contribute to pneumonia.

- Additional hospital space of 3% will contribute to a more efficient management and recovery of sick calves than the usual 1%.
- After about 3 days on board those calves that are deteriorating will usually be relatively easily detected. At this time segregation and mass medication of non-performers is appropriate. Micotil is the drug of choice.
- Rapid and aggressive veterinary treatment of calves is vital. As disease conditions tend to progress more rapidly in immature animals, the capacity to identify sick calves as early as possible will significantly improve their chances of survival. Medication must be administered as quickly as possible using the most appropriate chemicals. Respiratory disease is the most important and potentially lethal disease of calves on ships. Micotil 300 injection is the drug of choice. Cost of drugs should not be an issue when supplying the veterinary kit for the ship or deciding what chemical to use onboard. Treated animals must be marked to ensure that they are not accidentally subjected to double doses as Micotil and other drugs can be toxic if overdosed.
- After Micotil, chaff is seen as the most effective "treatment" for sick calves onboard. Good quality chaff has the capacity to improve appetite, provide good nutrition, correct digestive upsets and assist calves to recover from stressful events. Adequate chaff should be loaded to allow for this to form in the order of 5 % or more of the calf diet (levels up to 100% required in sick pens). Carrying sufficient volumes of chaff can be a problem for some vessels.
- The provision of appropriate electrolytes for calves is seen as important for both prevention and treatment of illness and stress. A relatively new product called "Maximin" has been found to be very effective for calves. The use of injectable Vitamin B is also seen as a useful supportive therapy for stressed calves. Vitamin D treatment may also be useful for calves derived from south eastern Australian winters.
- While some exporters had provided calves with special "calf pellet" diets onboard ship, most observers noted that these pellets were of little benefit and some even noted that they could be a little "rich" and have the potential encourage scouring. The majority opinion was that calves appeared to do quite well on the same pellets as provided to mature cattle as long as adequate quantities of chaff were also available. Dusty pellets damaged through augers will cause problems for calves as they do with mature cattle.
- Washing of the decks was seen as an important event for calves. More frequent washing may be required for young calves. When the decks become covered in manure/sawdust mix, the relative depth of the material can make it difficult to small calves to move through. A heavy coating of feaces and bedding on woolly-coated animals can cause problems for heat regulation. On the other hand, pen cleaning is a stressful event and should be carried out with extra care in the case of calves to avoid injury and undue levels of stress. Shovelling manure from the floors of calf pens may be an option especially in sick pens or those containing the smaller and more fragile animals.
- After washing is completed ensure calves are fed immediately to assist them to settle down as quickly as possible.

- The majority of health problems involve the respiratory system. After this, digestive tract problems are the next most important followed by a wide range of common ailments including pink eye, ringworm, injuries and infections. “Downer” calves need to be provided with suitable bedding to prevent the development of skin abrasions on pressure points. These tend to be more severe on smaller animals.
- The use of “Westerguns” (spring loaded pole syringes) was seen by a number of stockmen to be too severe to use in smaller calves. The explosive nature of the delivery may well be very stressful to animals with smaller muscle masses. These problems can be minimized using older, “used” guns with weakened springs. In addition, the dose should be delivered at an acute angle to the skin to increase the volume which is deposited subcutaneously. Delivery of drugs using conventional hand held syringes is recommended for smaller, weaker calves.
- The additional sailing time from Portland and Adelaide combined with the generally rough conditions in the Great Australian Bight ensure that mortalities and illness are almost always higher when shipments are sourced from these two locations.
- Greater numbers of smaller animals can be loaded onto a given vessel. The result is that in the case of ships carrying a high proportion of calves, the stockmen have many more individuals to observe and manage. Additional stockmen should be provided to vessels carrying large numbers of calves. Eg, a ship which will carry 2000 slaughter ox could carry 4000 calves.

Health Protocols.

Of the two health protocols which apply to this trade (effectively one for WA and one for other states), the WA version is much less intrusive than the version which must be used for animals sourced from Victoria and South Australia. This has the effect of placing the highest “protocol related” stress on the animals which will almost certainly have the highest levels of overall stress from other sources. This is due to the fact that calves sourced from the Victoria and SA will generally be subjected to more severe weather conditions and must be subjected to the additional hurdle of transport across the Great Australian Bight during the southern winter.

Recommendations in respect to the protocols are a statement of the obvious: -

- Existing protocols are excessive and result in unnecessary stress to calves.
- There is little doubt that the application of these protocols has a significant impact on the health of calves and their capacity to travel.
- The version applicable to Victoria and SA poses the greatest threat to the survival of calves as a result of the extremely high levels of intervention required.
- Any reduction in the level of protocol requirements will assist the health and survival of calves.
- Priority for negotiations to reduce the protocol should be given to the Victorian / SA version.

- It is difficult to make sensible comments on these protocols which look more like trade barriers than a logical attempt to protect the importing country from our bovine diseases.

Research

The export of calves by sea to Israel seems to have very few aspects which would benefit from additional research which has not already been raised in respect to other classes of cattle undertaking ocean voyages.

Best Practice Recommendations.

Pre-shipment Preparation

1. Where possible avoid exporting Bos taurus calves (especially Friesians) from southeastern Australia during the southern winter.
2. Ensure that holding facilities are well drained and protected from the elements, especially the wind.
3. Maintain modest stocking densities and change bedding frequently to avoid the development and spread of disease.
4. Provide free access to good quality hay or chaff as well as the pellets to be used during the voyage.
5. Only receive animals which have been satisfactorily weaned or those which have an arrival weight of not less than 150 kg at the holding facility.
6. Minimize the number and time of handling of calves during the application of the protocol and other management procedures.
7. Draft calves into appropriate size groupings prior to delivery to the ship.

Shipboard Management.

1. Conduct separate space calculations for animals under 200 kg.
2. Give calves 10% additional space over that prescribed by AMSA when stock is sourced from southern ports during winter months.
3. When shipments are underloaded from Portland and Adelaide to Fremantle allow calves to spread out into the additional space.
4. Provide calves with smaller pens and the better areas of ventilation and lighting.
5. Feed calves with conventional cattle fodder and good quality chaff throughout the voyage. Ensure adequate supplies of chaff are provided to allow for this to comprise a significant supplement to the diet of healthy animals and a major part of the diet of sick animals.
6. Ensure different weight range calves are adequately segregated.
7. Provide additional quantities of bedding materials.

8. Clean/wash frequently and provide fresh fodder immediately after the cleaning event. Take extra care when cleaning the pens.
9. Ensure trough heights are appropriate for the supply of both fodder and water. Provide additional feed troughs where possible.
10. Segregate calves of suspect health status to hospital pens with additional space and in locations which allow for easy access and frequent inspections. Provide shipments of calves with additional hospital pen space (3%).
11. Whenever calves are suspected of developing illness treat aggressively with the most appropriate chemicals.
12. Take extra care when using “Westerguns” on smaller calves. Use conventional syringes if this is feasible.
13. Provide appropriate electrolytes/mineral supplements to all voyages carrying calves.
14. Provide additional stockmen to shipments of large numbers of calves.